

Work Order ID 162675***162675***

Page 1

Thursday, June 08, 2017 8:40:36 AM

Item ID: D139-799-015 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Engine Wash
Start Date: 6/9/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 6/12/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference: SCHEDULED/C

Approvals: Process Plan:  Date: JUN 08 2017 Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
IIN-D139-799	L	JUN 08 2017		DAS 6 9-89					
100	Document Control	0.00							
100									
DC	Memo	0.00							
Doc.Control -USB or Paperwork	Photocopy bluefile & type labels per PPP D139-799-015 CHG005 								
				DAS 21 9-89					
110	Pick Kit	0.00							
110									
Packaging	Memo	0.00							
Packaging									
120	QC4- 100% Inspect kits for completeness	0.00							
120									
QC	Memo	0.03							
Quality Control									

DAS
28
9-89

JUN 13 2017

JUN 08 2017

DAS
6
9-89DAS
27
9-89DAS
28
9-89

JUN 13 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER : ☐							

Work Order ID 162675***162675***

Page 2

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Item ID: D139-799-015 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
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Start Date: 6/9/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 6/12/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference: SCHEDULED/C

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Identify as per dwg & Stock Location: <i>Fg019</i>	0.00							
130									
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D139-799-015 Location: _____ PPP rev: _____								
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.10							
Quality Control									

DAS 28 2-89 JUN 13 2017

DAS 21 9-89 JUN 14 2017

DAS 21 9-89 JUN 14 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause			FAULT CATEGORY							
Environment ☐	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong
Design ☐	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions
Doc/Data ☐	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance
Equip/Tooling ☐	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect
Handling/Pre ☐	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing
Material ☐	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved
Internal Transport ☐	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing
Tribal Knowledge ☐	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish
LOA ☐	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread
Substation ☐	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence
Past Expiry Date ☐	☐	Manufacturing Process	OTHER :							
Misidentified ☐	☐	Past Due								

Picklist Print

Thursday, June 08, 2017 8:40:35 AM

Page 1

Work Order ID: 162675

162675

Parent Item: D139-799-015

D139-799-015

Parent Item Name: Engine Wash

Start Date: 6/9/2017

Required Date: 6/12/2017

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:B 11.07.04 new issue DD verf:JLM IPP REV:B
AS PER ECN 11-598 11-06-05 JLM VERF BY:DD IPP Rev:C 11.09.27
PER CHG003 DD verf:EC IPP Rev:D 13.09.24 PER
CHG005/ECN13-579 DD verf:JLM IPP REV:E 16.10.13 AS PER IIN
REV.L DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN3C3A		Purchased	No			110	Each	74.0000	4	4			

AN3C3A
Bolt

**

DAS 27
6 9-89

JUN 08 2017

DAS 28
9-89

Location	Loc Qty	Loc Code
GA	57	
m134055	2	
m136182	55	
ST350	17	
m136740	17	

AN3C5A Purchased No

AN3C5A
Bolt

110 Each 1,045.000 3 3

**

DAS 27
6 9-89

JUN 08 2017

DAS 28
9-89

Location	Loc Qty	Loc Code
FG	5	
122800	5	
FP001	758	
M136182	1	
M136579	2	
M137361	755	
OVER002	200	
M137710	200	
ST350	82	
M134676	1	
M135442	81	

3

DQA: _____ Date: _____



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Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : ☐					

Picklist Print

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Work Order ID: 162675

162675

Parent Item: D139-799-015

D139-799-015

Parent Item Name: Engine Wash

Start Date: 6/9/2017

Required Date: 6/12/2017

Start Qty: 1.00

Required Qty: 1.00

AN526-1032R16

Purchased

No

110

Each

129.0000

4

4

AN526-1032R16

Screw

**

JUN 08 2017

DAS 6 27 9-89

DAS 28 9-89

Location

Loc Qty

Loc Code

ST326

129

m134702

129

AN832-6J

Purchased

No

110

Each

9.0000

2

2

AN832-6J

Union

**

JUN 08 2017

DAS 6 27 9-89

DAS 28 9-89

Location

Loc Qty

Loc Code

OVER007

8

m137361

8

ST324

1

m136986

1

AN924-6J

Purchased

No

110

Each

15.0000

4

4

AN924-6J

NUT

**

JUN 08 2017

DAS 6 27 9-89

DAS 28 9-89

Location

Loc Qty

Loc Code

FG

4

123245

2

m132256

2

ST322

11

m137075

11

CB2000CRA3-28

Purchased

No

110

Each

64.0000

3

3

CB2000CRA3-28

Stud

**

JUN 08 2017

DAS 6 27 9-89

DAS 28 9-89

Location

Loc Qty

Loc Code

CCK004

50

m136485

50

ST558

14

m136485

14

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Shop Packet Print

Page 2

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
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Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER : ☐							

Picklist Print

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Work Order ID: 162675

162675

Parent Item: D139-799-015

D139-799-015

Parent Item Name: Engine Wash

Start Date: 6/9/2017

Required Date: 6/12/2017

Start Qty: 1.00

Required Qty: 1.00

CB4022V3CR8

Purchased No

110

Each

14.0000

3

3

CB4022V3CR8

Anchor Nut

DAS
28
9-89

Location

Loc Qty

Loc Code

ST558

14

m136986

14

3

CB91

Purchased No

110

Each

47.0000

2

2

CB91

Acrylic Adhesive, 3.5g

DAS
28
9-89

Location

Loc Qty

Loc Code

PK

47

m135936

1

m136734

6

m136936

40

2

D4121-1

Manufactured No

110

Each

3.0000

2

2

D4121-1

Hose Assembly

DAS
28
9-89

Location

Loc Qty

Loc Code

FG

3

114101

1

132053

2

2

D4121-3

Manufactured No

110

Each

5.0000

1

1

D4121-3

Hose Assembly

DAS
28
9-89

Location

Loc Qty

Loc Code

FG

1

91535

1

ST213

4

159125

4

1

JUN 08 2017 DAS 6 9-89 DAS 27 9-89

JUN 08 2017 DAS 6 9-89 DAS 27 9-89

JUN 14 2017 DAS 6 9-89 DAS 27 9-89

JUN 08 2017 DAS 6 9-89 DAS 27 9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐					
OTHER : ☐									

Picklist Print

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Work Order ID: 162675

162675

Parent Item: D139-799-015

D139-799-015

Parent Item Name: Engine Wash

Start Date: 6/9/2017

Required Date: 6/12/2017

Start Qty: 1.00

Required Qty: 1.00

D4121-5 Manufactured No

110 Each 5.0000 1 1

D4121-5

Hose Assembly

**

JUN 08 2017

DAS 27 9-89

DAS 28 9-89

Location

Loc Qty

Loc Code

ST213

5

158087
159126

1

4

D4131-041 Manufactured No

110 Each 3.0000 1 1

D4131-041

Manifold Assembly

**

JUN 08 2017

DAS 27 9-89

DAS 28 9-89

Location

Loc Qty

Loc Code

ST085

3

159444

3

D4131-043 Manufactured No

110 Each 5.0000 1 1

D4131-043

Doubler Assembly

**

JUN 08 2017

DAS 27 9-89

DAS 28 9-89

Location

Loc Qty

Loc Code

ST085

5

157329

5

D4146-1 Manufactured No

110 Each 5.0000 2 2

D4146-1

Fitting

**

JUN 08 2017

DAS 27 9-89

DAS 28 9-89

Location

Loc Qty

Loc Code

ST085

5

157427

5

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
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Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
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Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER : ☐							

Picklist Print

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Work Order ID: 162675

162675

Parent Item: D139-799-015

D139-799-015

Parent Item Name: Engine Wash

Start Date: 6/9/2017

Required Date: 6/12/2017

Start Qty: 1.00

Required Qty: 1.00

D4182-1 Manufactured No

110 Each 6.0000 2 2

D4182-1

Fitting, Quick Disconnect

**

JUN 08 2017

DAS 27 9-89

Location

Loc Qty

Loc Code

ST089

6

158089

6

D4384-1 Manufactured No

110 Each 6.0000 1 1

D4384-1

Placard

**

JUN 08 2017

DAS 27 9-89

Location

Loc Qty

Loc Code

FG

5

80679

5

ST095

1

157415

1

MS21043-3 Purchased No

110 Each 747.0000 4 4

MS21043-3

Nut

**

JUN 08 2017

DAS 27 9-89

Location

Loc Qty

Loc Code

FG

80

103691

80

FP001

119

m136182

119

GA

88

m136182

88

OVER007

300

m137587

300

ST302

160

m137459

160

MS21043L3 MS21043-3 Purchased No

110 Each 0.0000 6 6

MS21043L3

Nut

**

M137459 JUN 08 2017

DAS 27 9-89

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Shop Packet Print

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DQA: _____ Date: _____



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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER : _____							

Picklist Print

Thursday, June 08, 2017 8:40:35 AM

Page 6

Work Order ID: 162675

162675

Parent Item: D139-799-015

D139-799-015

Parent Item Name: Engine Wash

Start Date: 6/9/2017

Required Date: 6/12/2017

Start Qty: 1.00

Required Qty: 1.00

MS21919WCH16

Purchased

No

110

Each

6.0000

2

2

MS21919WCH16

Clamp

DAS
28
9-89

Location

Loc Qty

Loc Code

ST291

6

M136953

6

JUN 08 2017

DAS
6
9-89

DAS
27
9-89

MS21919WCH4

Purchased

No

110

Each

6.0000

2

2

MS21919WCH4

Clamp

DAS
28
9-89

Location

Loc Qty

Loc Code

ST291

6

M136953

6

JUN 08 2017

DAS
6
9-89

DAS
27
9-89

MS21919WCH9

Purchased

No

110

Each

12.0000

4

4

MS21919WCH9

Clamp

DAS
28
9-89

Location

Loc Qty

Loc Code

ST291

12

m136986

12

JUN 08 2017

DAS
6
9-89

DAS
27
9-89

MS21919-WDG9

Purchased

No

110

Each

41.0000

9

9

MS21919-WDG9

Clamp

DAS
28
9-89

Location

Loc Qty

Loc Code

ST293

41

m134574

2

m136975

39

JUN 08 2017

DAS
6
9-89

DAS
27
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐				
OTHER : _____									

Picklist Print

Thursday, June 08, 2017 8:40:35 AM

Page 7

Work Order ID: 162675

162675

Parent Item: D139-799-015

D139-799-015

Parent Item Name: Engine Wash

Start Date: 6/9/2017

Required Date: 6/12/2017

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0316R AN960C10LL Purchased

No

110

Each

422.0000

6

6

NAS1149C0316R

WASHER

DAS
28
9-89

Location

Loc Qty

Loc Code

ST266

422

m136511

422

110

Each

3,881.000

8

8

NAS1149C0332R

Purchased

No

NAS1149C0332R

WASHER

Location

Loc Qty

Loc Code

FP001

1254

m137381

1254

GA

514

m133284

22

m136444

492

ST260a

2000

m135408

0

m136741

0

m137597

2000

ST266

113

m135908

104

m136741

9

NAS1149C0932R

Purchased

No

110

Each

64.0000

4

4

NAS1149C0932R

WASHER

DAS
28
9-89

Location

Loc Qty

Loc Code

ST265

64

m134702

64

DAS
28
9-89

JUN 08 2017

DAS
27
9-89

JUN 08 2017

DAS
27
9-89

JUN 08 2017

DAS
27
9-89

Thursday, June 08, 2017 8:40:35 AM

Shop Packet Print

Page 7

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
☐ OTHER : _____					

Picklist Print

Thursday, June 08, 2017 8:40:35 AM

Page 8

Work Order ID: 162675

162675

Parent Item: D139-799-015

D139-799-015

Parent Item Name: Engine Wash

Start Date: 6/9/2017

Required Date: 6/12/2017

Start Qty: 1.00

Required Qty: 1.00

NAS43DD3-80N

NAS43DD3-
68FC

Purchased

No

110

Each

14.0000

3

3

NAS43DD3-80N

Spacer

**

Location

Loc Qty

Loc Code

ST550

14

m136511

14

JUN 08 2017

DAS
6
9-89

DAS
27
9-89

DAS
28
9-89

3

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																										
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

Qty -015	Part Number	Description
X	D139-799-015	ENGINE WASH KIT
2	D4121-1	HOSE ASSEMBLY
1	D4121-3	HOSE ASSEMBLY
1	D4121-5	HOSE ASSEMBLY
1	D4131-041	MANIFOLD ASSEMBLY
1	D4131-043	DOUBLER ASSEMBLY
2	D4146-1	FITTING
2	D4182-1	FITTING, QUICK DISCONNECT
1	D4384-1	PLACARD
3	AN3C5A	BOLT (or NAS6603-4)
4	AN3C3A	BOLT
4	AN526-1032R16	SCREW
2	AN832-6J	UNION (or AN837-6J)
4	AN924-6J	NUT
4	MS21043-3	NUT
6	MS21043L3	NUT
4	NAS1149C0932R	WASHER (or AN960C916L)
8	NAS1149C0332R	WASHER (or AN960C10L)
6	NAS1149C0316R	WASHER (or AN960C10LL)
3	NAS43DD3-80N	SPACER
9	MS21919WDG09	CLAMP (or AS21919WDG09)
2	MS21919WCH4	CLAMP (or AS21919W CH4)
4	MS21919WCH9	CLAMP (or AS21919W CH9)
2	MS21919WCH16	CLAMP (or AS21919W CH16)
3	CB2000CRA3-28	STUD (or A366A3E30C)
3	CB4022V3CR8	ANCHOR NUT (or AW001TL3A08)
2	CB91	3.5g ACRYLIC ADHESIVE KIT

Work Order ID 162675

162675

Thursday, June 08, 2017 8:40:36 AM

Item ID: D139-799-015 Accept *N9000040100* Setup Start *NS1*
 Revision ID: Stop *NS2*

Item Name: Engine Wash

Start Date: 6/9/2017 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 6/12/2017 Req'd Qty: 1.00 *1*

Customer:

Reference: SCHEDULED/C

Approvals: Process Plan:  Date: JUN 08 2017 Tooling: Date: Run Start *NR1*
 QC: Date: SPC (Y/N): Date: Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr	JUN 08 2017							
IIN-D139-799	L								

100	Document Control	0.00							
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100

DC

Doc.Control -USB or Paperwork

Memo

0.00

Photocopy bluefile & type labels per PPP D139-799-015

CHG 006

See attached document



JUN 12 2017

110	Pick Kit	0.00							
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110

Packaging

Memo

0.00

Packaging

120	QC4- 100% Inspect kits for completeness	0.00							
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120

QC

Quality Control

Memo

0.03

Change Record

PAGE 1 OF 1

Part Number: D139-799-015

Description: ENGINE WASH

[illegible]

United States of America
Department of Transportation - Federal Aviation Administration

Supplemental Type Certificate

Number SR02138SE

This certificate, issued to

Dart Aerospace USA, Inc.
190 S. Danebo Ave.
Eugene, OR 97402

certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of Part 29 of the Federal Aviation Regulations.

Original Product—Type Certificate Number: R00002RD
Make: Agusta
Model: AB139, AW139

Description of the Type Design Change: Installation of Dart D139-799 Maintenance Kits fabricated in accordance with Dart Master Document List MDL-D139-799, Revision C, dated June 6, 2010, or later Federal Aviation Administration (FAA) approved revision, Installed in accordance with Dart Installation Instructions IIN-D139-799, Revision D, dated June 10, 2011, or later FAA-approved revision, and Maintained in accordance with Dart Instructions for Continued Airworthiness ICA-D139-799, Revision 3, dated May 5, 2011, or later FAA-accepted revision.

Limitations and Conditions: Approval of this change in type design applies to the rotorcraft listed above only. This approval should not be extended to other rotorcraft of this model on which other previously approved modifications are incorporated unless it is determined by the installer that the relationship between this change and any of the other previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of the rotorcraft. A copy of this certificate and the ICA must be maintained as part of the permanent records of the modified rotorcraft.

If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: October 5, 2010

Date reissued: October 28, 2015

Date of issuance: July 18, 2011

Date amended:



By direction of the Administrator

[Signature]
(Signature)

[Title] Manager, Seattle Aircraft Certification Office
(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

This certificate may be transferred in accordance with FAR 21.47.